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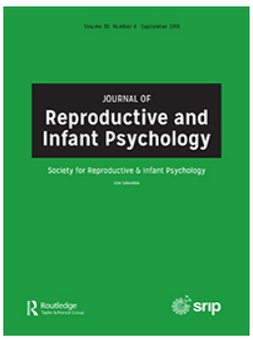

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Changes in emotions and personal goals in primiparous pregnant women during group intervention for fear of childbirth

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ABSTRACT

The changes in emotions, subjective fear of childbirth, and personal goals were examined during a group intervention to treat fear of childbirth (FOC). The objective was to gain a more detailed understanding of the changes occurring during the group intervention of FOC. The changes in emotions, subjective FOC, and personal goals were studied in primiparous pregnant women with severe FOC participating in a group intervention ($n = 105$). The group intervention contained six sessions during pregnancy and one after childbirth. At every session, the participants filled in a questionnaire regarding their experiences of current positive and negative emotions and the subjective FOC. The participants also set and reported their personal goals in their preparation for childbirth and parenthood. The negative emotions decreased from the beginning of the intervention. The change became significant after the fourth session. The amount of positive emotions increased but became statistically significant only after the delivery. The subjective FOC decreased significantly from the beginning of the intervention. Personal goals shifted from being mainly self-related to being mostly related to parenthood. The group intervention decreased FOC and promoted changes in emotions and personal goals that foster emotional preparedness for childbirth. It seems that the decrease in FOC was made possible through gaining a better capacity to regulate emotions, especially negative emotions. As negative emotions and fear decreased, personal goals simultaneously changed in the direction known to be adaptive for the new life situation as a parent of a newborn.

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Fear of childbirth; group intervention; change in emotions; transition to parenthood

Introduction

The experience of psychological security and safety helps pregnant women to prepare emotionally for the pending childbirth Nilsson, Thorsell, Hertfelt Wahn, & Ekström, 2013). Security influences a pregnant woman's resources, emotions, and behaviour, increasing first-time mothers' chances for a positive birth experience (Nilsson et al., 2013) and a sense of control

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during childbirth (Karlström, Nystedt, & Hildingsson, 2015). Besides psychological security, body awareness, knowledge, and understanding of the childbirth process itself, as well as trust in the medical staff, are known to promote the emotional preparation of the mother for the forthcoming childbirth (Melender & Lauri, 2002). When a parturient suffers from severe fear of childbirth (FOC), these crucial elements are often lacking. The role of uncertainty during the birthing process has been found to be an overarching theme underpinning women's fears. Enhancing tolerance of uncertainty may be a way to reduce women's FOC (Sheen & Slade, in press).

FOC is defined as a disproportionate fear of giving birth, hindering the normal psychological preparation for the delivery itself and complicating the transition to parenthood (Ayers, Bond, Bertullies, & Wijma, 2016; Fenwick et al., 2015). Six to 10% of all pregnant women suffer from severe FOC (Laursen, Hedegaard, & Johansen, 2008; Nieminen, Andersson, Wijma, Ryding, & Wijma, 2016). The aetiology of FOC is likely to be multifactorial and may be related to a more general anxiety proneness as well as to very specific fears (Klabbers, Van Bakel, Van den Heuvel, & Vingerhoets, 2016). Women with adverse expectations of childbirth have been found to have more negative actual experiences in childbirth (Slade, Pais, Fairlie, Simpson, & Sheen, 2016), so trying to modify the emotions considering these expectations can be crucial in treatment for FOC.

FOC can cause anxiety (Storksen, Eberhard-Gran, Garthus-Niegel, & Eskild, 2012), nightmares (Wijma & Wijma, 2016), and depression (Waldenstrom, Hildingsson, & Ryding, 2006). Anxiety is known to increase pain reactivity (Rhudy, 2009), aggravating the challenge to cope with labour pain. There is twice as much mental comorbidity among FOC patients, and the emotional burden they carry predisposes them to difficulty in preparing for childbirth (Halvorsen, Nerum, Oian, & Sorlie, 2008; Rouhe, Salmela-Aro, Gissler, Halmesmäki, & Saisto, 2011; Sydsjö et al., 2015). Postnatal depression is more likely to take place with FOC (Alipour, Lamyian, & Hajizadeh, 2012; Czarnocka & Slade, 2000), complicating the development of early mother–infant bonding (Ayers, Joseph, McKenzie–McHarg, Slade, & Wijma, 2008; Ohashi et al., 2014).

Women possess a natural tendency for preparedness for emotional and psychological changes during their pregnancy. Therefore, women with FOC are usually motivated to receive help (Aznal, Wong, Tan, See, & Wong, 2014). With proper treatment, it is possible not only to relieve the fear but also to promote a physically and mentally secure childbirth and a more positive transition to parenthood (Koushede et al., 2017; Rouhe et al., 2015; Wijma & Wijma, 2016). When FOC is noted beforehand, the personnel can help women to cope with the possible stressful situation of delivery (Handelzalts, Fisher, Sadan, & Goldzweig, 2017). By identifying the main elements and moderators of the fear, it is possible to build the base for supportive strategies to reduce the FOC (Sheen & Slade, in press). The atmosphere of the treatment needs to be approving and confidence-inspiring and to encourage the participants to express the contradictory and difficult emotions of becoming a parent (Adler & Hershfield, 2012; Markin, 2013; Striebich, Tegethoff, & Kentenich, 2017).

According to the lifespan model of motivation (Salmela-Aro, 2009), if a woman entering motherhood is able to adjust her personal life goals in accordance with the demands of her current life situation and the ongoing transition phase, it leads to higher well-being and an increase in child- and pregnancy-related goals during pregnancy (Salmela-Aro, 2012). An increase in family-related goals after childbirth is related to a decrease in depressive symptoms, and an increase in self-related goals after childbirth is related to an increase in

depressive symptoms and low levels of well-being. Furthermore, depressive symptoms predict more self-related goals (Salmela–Aro, Nurmi, Saisto, & Halmesmäki, 2000). The lifespan model of motivation suggests that personal goals that match the developmental tasks of a particular stage of life are adaptive in directing one's life and therefore contribute to one's sense of well-being (Salmela-Aro, 2009, 2012). Promoting the transition to positive parenthood can be supported during pregnancy psycho-educative programs (Duncan & Bardacke, 2010; Toohill, Callander, Gamble, Creedy, & Fenwick, 2017; Toohill et al., 2014).

According to our earlier published studies, the group intervention (Nyytti®) used in this study was found to be an effective and beneficial method to treat severe FOC. The intervention has proven to bring physiological and psychological advantages, and it is also cost-effective. In a non-randomised study (Saisto, Toivanen, Salmela-Aro, & Halmesmäki, 2006), the group intervention was compared with individual sessions with an obstetrician or midwife. After the sessions, the women in the intervention group chose to have a vaginal delivery in more cases and rated their childbirth experience as more positive than did those in the conventional treatment group. A randomised controlled study (Rouhe et al., 2013, 2015) compared the Nyytti group intervention with a control group of individuals showing similar symptoms of fear. Women who participated in the group intervention had a greater number of spontaneous vaginal deliveries, a smaller number had an emergency caesarean delivery, and participants had a less fearful childbirth experience regardless of delivery mode. Furthermore, the symptoms of postnatal depression were lower and maternal adjustment was better in the participants of the group intervention. The intervention increased the mothers' preparedness for childbirth, which predicted an increase in positive motherhood (Salmela–Aro et al., 2012).

To gain more detailed knowledge of the psychological change that occurs during Nyytti® group intervention, we examined the changes in emotions, the subjective experience of FOC, and personal goals during the examined group intervention for FOC.

Our hypotheses at the onset of our study were:

(1) During the intervention, participants' emotions will become more positive and negative emotions will decrease.
(2) Participants' subjective FOC will decrease as the intervention proceeds.
(3) During the intervention, participants' personal goals will change from self-related goals to goals related to parenthood.

Materials and methods

This study was approved by the Ethics Committee for Gynaecology and Obstetrics, Otology, Ophthalmology, Neurology and Neurosurgery of the Helsinki University Central Hospital (376/E9/05 from 27 October 2005), and an informed consent was collected from everyone who filled in any of the questionnaires.

The data used in this study have been collected for a wider randomised controlled trial (RCT) study (n = 4575), which was conducted at the Helsinki University Hospital maternal clinics from 2007–2010 (Rouhe et al., 2011, 2013, 2015; Salmela–Aro et al., 2012). The participating primiparous mothers' FOC was first screened via the Wijma Delivery Expectancy Questionnaire (W–DEQ–A) at the time of their routine ultrasonography screening at the gestational age of 11–13 weeks. Those who scored ≥ 97 on the W–DEQ–A (n = 460), indicating

high FOC, were randomised into either the group intervention (n = 157) or control group (n = 303). We examined the psychological change occurring during the treatment in those randomised to the intervention. The questionnaire was filled in altogether at seven measuring points. The data used in this study have not been published before.

Participants

The participants in this study were those who were randomised into the group intervention and participated in at least three of the seven sessions (n = 105), the minimum participation criterion ensuring a potential influence of the treatment. Altogether, 45 women (28.5% of those randomised to the intervention) did not want to participate, mostly expressing that they did not want to share their emotions in a group. The dropouts (less than 3 sessions, n = 7) from sessions were for various reasons: physical pregnancy problems, other physical complaints, or other problems, such as difficulties in getting to the sessions. The background information of the participants is shown in Table 1.

Table 1. Information of the participants.

	Intervention group 1	
Variable	A Participated n = 112	B Not participated n = 45
Age years (mean ± SD)	29.8 ± 4.4	28.3 ± 5.0
Occupation		
Upper white-collar workers	36(40.0%)	5(12.2%)
Lower white-collar workers	26(28.9%)	7(17.1%)
Self -employed	11(12.2%)	11(26.8%)
Students	7(7.8%)	3(7.3%)
Education		
Upper University degree	37(41.1%)	6(14.6%)
Lower university degree	24(26.7%)	5(12.2%)
Collage	10(11.1%)	6(14.6%)
Vocational degree	8(8.9%)	6(14.6%)
Primary	5(5.6%)	4(9.8%)
Co-habiting *n* (%)~	80(88.9%)	24(58.5%)
Previous miscarriages	12(13.3%)	3(7.3%)
Previous Termination of pregnancy	14(15.6%)	7(17.1%)
Gestational age weeks (mean ± SD) at screening point	13.5 ± 3.6	14.1 ± 4.2
Wdeq score (mean ± SD)	114 ± 11	112 ± 11
VAS (mean ± SD)	7.8 ± 1.6	7.9 ± 1.7
Gestational age weeks (mean ± SD)	39.6 ± 1.6	39.8 ± 1.4
Delivery mode		
spontaneus vaginal	59(65.6%)	24(58.5%)
vaginal	69(76.7%)	32(78.0%)
VE (Vacuum)	10(11.1%)	8(19.5%)
Caesarian (CS)	21(23.3%)	9(22.0%)
elective CS	9(10.0%)	3(7.3%)
emergency CS	12(13.3%)	6(14.6%)
CS because of FOC	11(12.2%)	2(4.9%)
Epidural or spinal anestesia *n* (%)*	60 (87.0%)	25(78.1%)
Bleeding ml (mean ± SD)	567 ± 547	450 ± 252
Stage I min (mean ± SD)	592 ± 287	773 ± 529
Stage I hours (mean ± SD)	9.4 ± 4.7	11.8 ± 7.8
Stage II min (mean ± SD)	36.7 ± 36.4	33.6 ± 25.1
Birth weight g (mean ± SD)	3513 ± 552	3575 ± 549
pH < 7.10 *n* (%)	5(5.6%)	3(7.3%)
Apgar (1 min) < 7 n (%)	8(8.9%)	6(14.6%)
Post partum operations n (%)*	12(17.4%)	3(9.4%)

*From vaginal births.

Group intervention

The group intervention Nyytti® (Table 2) was developed by psychologists, midwifes, and obstetricians at Helsinki University Hospital in 1998 to treat patients with severe FOC.

The group intervention (Rouhe et al., 2015; Saisto et al., 2006) consisted of 6 group sessions (once a week for 2 h), which were held during pregnancy (on average, starting in the 28th week of pregnancy), plus one session 6–8 weeks after delivery with the mothers accompanied by their infants. Each group consisted of a maximum of six nulliparous women. The sessions were led by a psychologist (n = 3) with specialised skills in group therapy and pregnancy issues. Because there were three different psychologists leading the groups, we also checked whether any particular leader might have influenced the results on subjective FOC, but there was no such effect of any statistical significance: $t(70) = 0.397$, p=0.692. One session was led by together with a midwife, taking place in a delivery room. The sessions were semi-structured, beginning with the sharing of current emotions and thoughts that came up after the previous session. Every session had a focused topic related to birth issues and parenthood, and the meeting ended with a 30-min guided relaxation/mindfulness-based exercise.

The group intervention integrates psycho-education, the lifespan model of motivation (Salmela-Aro, 2009), and practices to support mentalisation and mind–body connection. These modalities are proven to decrease FOC and promote a positive transition to parenthood (Sadler, Slade, & Mayes, 2006; Saisto et al., 2006; Salmela–Aro et al., 2012). The sessions involved psychoeducation of childbirth and parenting issues to support the transition to parenthood. An improved understanding of the causes and connections of emotions and pain broadens participants' perception and interpretation of the FOC. This may enhance self-efficacy and lead to better self-control (which is important because clients often feel helpless and out of control), enhancing the participants' preparedness for childbirth. The discussions aimed at promoting mentalisation, that is, reflecting on one's own mental processes and those of others in order to explain behaviours and intentions. The capacity of mentalising is assumed to be a crucial factor of change during a psychotherapeutic intervention (Fonagy & Allison, 2014; Slade, 2008). If the mind is loaded with fear and anxiety, it hinders the capability to mentalise and therefore psychologically prepare for a situation, in this case childbirth (Pajulo et al., 2012). Every session also contained practices to strengthen mind–body connection. Emotions can be regulated with focused breathing and by finding the link between emotions and their bodily counterparts using, for example, mindfulness-based exercises (Arch & Craske, 2006). Psychoeducation and supporting mentalisation and mind–body connection increase participants' means to identify and express emotions (Greenberg & Paivio, 2003; Saffran & Greenberg, 1991), gain a stronger mind–body connection (Van Der Kolk, 2014), and develop greater internal security in order to cope with the challenges of pending childbirth and parenthood (Melender & Lauri, 2002).

Measures

At the beginning of each session (7 sessions), the participants filled in a questionnaire, including measurements of their current emotions, subjective FOC, and describing personal goals related to preparing for the childbirth or future parenthood.

Table 2. Manual for Psycho-Educative Group Therapy Intervention Every session includes discussion around a focused topic (90-min) and 30-min guided relaxation.

Group session	Weeks of pregnancy	Topic	Agenda	In attendance
1	28	Introduction Pregnancy and feelings about childbirth Normalisation of fear. Effects of relaxation	Getting to know each other Building a safe environment Sharing feelings about childbirth. Psycho-education on links between pain and emotions	Therapist
2	29	Stages of labour	Psycho-education about fear Education about stages of labour How to regulate the emotions with breathing techniques	Therapist
3	30	Childbirth at hospital	Introduction by midwife who goes through the process of the birth, what happens in hospital, stages of labour and methods of pain-relief	Therapist, Midwife
4	31	Partner communication. Building a family	Strenghtening the connection between parents Empathising with the emotional needs of the baby	Therapist, Partner
5	32	Transition to motherhood, Attachment and bonding with the infant Signs of postnatal depression and its treatment	Psycho-education about the time after birth Sharing emotions about motherhood. Emotional bonding with the infant	Therapist
6	33	Final preparations for labour Childbirth wishes addressed to the midwife	Getting prepared for delivery Obtaining support Encountering setbacks	Therapist
7	6–8 weeks after delivery	Delivery experiences. Mother-infant relationship and positive parenthood	Information about motherhood. Introduction of the infants Sharing the birth stories Summarising the group experience. Information on how to get help if needed Discussion of the joys and difficulties of being a mother	Therapist, Infants

Emotions

Emotions were measured with the validated Positive Affect and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS is regarded as a reliable measure for nonclinical populations and has been shown to be highly consistent internally and stable at appropriate levels over a 2-month time period (Watson et al., 1988). Participants completing the PANAS were asked to rate the extent to which they experienced each of 20 emotions on a 5-point Likert-type scale ranging from *not at all* to *very much*. Half of the presented emotion words concern positive affect (interested, alert, attentive, excited, enthusiastic, inspired, proud, determined, strong, active), and the other half concern negative affect (distressed, upset, guilty, ashamed, hostile, irritable, nervous, jittery, scared, afraid). From the positive emotions scale, the item 'excited' was removed because it did not correlate with the other items. For positive affect scales at different measurement times, the Cronbach's alphas varied between 0.83 and 0.89. The Cronbach's alpha reliabilities for negative affect scales at different measurement times varied between 0.77 and 0.91.

Subjective fear of childbirth

Subjective FOC was measured with the Visual Analog Scale (VAS; Rouhe et al., 2013; Wewers & Lowe, 1990), ranging from 0 to 10 (from *not at all* to *extremely high*). When responding to a VAS item, respondents specify their level of agreement to a statement by indicating a position along a continuous line between two endpoints. The baseline measurement of the VAS for FOC was set at the maternal clinic as the time of the routine ultrasonography (gestation weeks 11–13) and W–DEQ–A screenings (Rouhe et al., 2013) before they were referred to the group intervention. At the beginning of each group session, the subjective FOC was measured again.

Personal goals

The participants were asked to set a personal goal related to preparing for the childbirth or future parenthood ('Create a goal associated with preparing for the childbirth or parenthood'; Salmela-Aro, 2012; Salmela-Aro, Nurmi, Saisto, & Halmesmäki, 2000). A blank space was provided for describing the personal goal. At every session, it was possible to set a new goal. In line with the thematic analysis (Joffe, 2012), the personal goals were categorised into sub-themes with two independent researchers. Thematic analysis involves searching a dataset to find repeated patterns of meaning (Braun & Clarke, 2006). It aims to identify the essential topics or themes forming the data. The themes can be considered topics which recur in the data in one form or another. Thematic analysis proceeds from identifying and categorising the themes to enable carrying out a closer and more detailed exploration.

Using thematic mapping, we identified four sub-categories: (1) Self-related (e.g. 'I want to survive and be alive', 'I want to talk with others about my fear', 'I want to get help for my fear and anxiety'). This theme contained transcriptions of being concerned about oneself, with no implications regarding the impending childbirth, the infant, or parenthood. (2) Childbirth-related (e.g. 'I want to give birth safely', 'I want to prepare for the childbirth', 'I hope the childbirth will not be like I fear'). This theme contained transcriptions concerning childbirth issues, both positive and negative. (3) Infant-related (e.g. 'I'm looking forward to meeting my baby', 'I hope my baby will be healthy'). This theme contained transcriptions mentioning the infant. (4) Parenthood-related (e.g. 'I want to be a good and loving parent',

Table 3. Examples of created personal goals divided in themes.

Themes	Self-related	Childbirth-related	Infant-related	Parenthood-related
Examples	'I want to survive and be alive,' 'I want to talk with others about my fear,' 'I want to get help for my fear and anxiety'	'I want to give birth safely,' 'I want to prepare for the childbirth,' "I hope the childbirth will not be like I fear	'I'm looking forward to meeting my baby,' "I hope my baby will be healthy	'I want to be a good and loving parent,' 'I want to prepare for parenthood,' 'I hope to be a caring mother'

'I want to prepare for parenthood', 'I hope to be a caring mother'). This theme contained transcriptions mentioning future parenting (Table 3).

Statistical analyses

Statistical analyses were conducted using Mplus (version 7; Muthén & Muthén, 1988–2012) and SPSS (version 20). Hierarchical linear modelling (HLM) with full-information maximum likelihood estimation (MLR estimation in Mplus) was used to investigate individuals' changes over time with seven repeated measures. HLM accounts for missing values at random (MAR) and includes all available data. In other words, the missing data in HLM are supposed to be MAR. The Wald test was used for testing the effects in the model, that is, whether the average value changes in relation to time. If the Wald test was significant, then the parameter estimates were used to test whether there was a significant change between successive measurements.

Within-group effect sizes (ESs) were reported using Cohen's *d* and were calculated as follows. The effect size was calculated for the change from the baseline to the seventh measurement by dividing the mean change from the baseline by the combined (pooled) standard deviation (*SD*; Feske & Chambless, 1995; Morris & DeShon, 2002). A within-group ES of 0.5 was considered small, 0.8 moderate, and 1.1 large (Cohen, 1988).

Regarding personal goals, the transcriptions were read and themes were identified. A thematic map was drafted and the themes were defined and named. The sums of personal goals from each session were calculated, and the change from one sub-category to another was viewed with crosstabs (cross-tabulations). Boyatzis (1998) suggested that thematic analysis can also be used to transform qualitative data into a quantitative form and subject them to statistical analyses, so we also checked the statistical significance of the change in participants' goals. Using the nominal variable 'personal goals', we tested the significance of change between the first and seventh measure with the McNemar test (SPSS 22). Beforehand, we had to recode the nominal variable as a dummy-coded variable and then test every category separately.

Results

Changes in negative and positive emotions

First, we analysed repeated measurements of negative emotions, taking measurements at seven different time points (every session; see Figure 1). For negative emotions, the Wald test for change was statistically significant (Wald = 35.43, $df = 6$, $p < 0.001$). The negative emotions started to decrease after the first session, and the statistically significant decrease

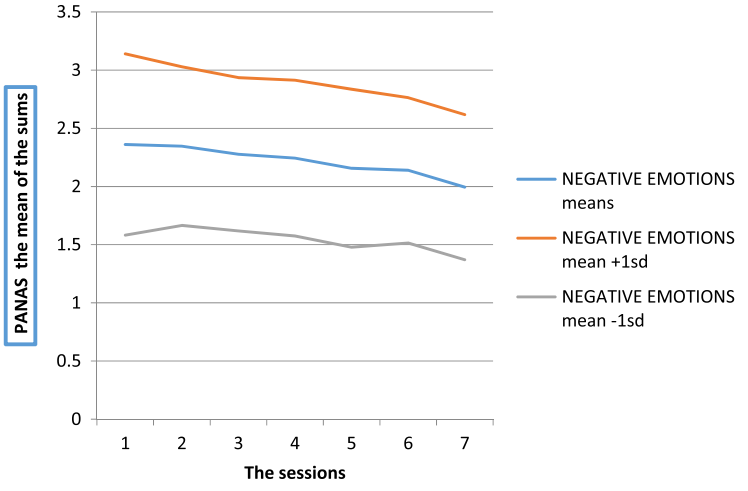

Figure 1. The change in negative emotions during the group intervention. Sessions 1–6 took place before and Session 7 after childbirth. The mean of the sums at Session 1 was 2.36 ± 0.78, at Session 6 it was 2.14 ± 0.62, and at Session 7 it was 1.99 ± 0.62.

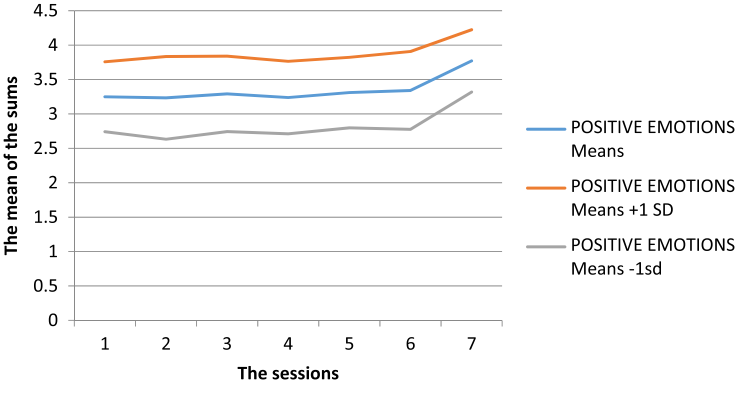

Figure 2. The change in positive emotions measured with the PANAS. Sessions 1–6 took place before and Session 7 after childbirth. The mean of the sums at Session 1 was 3.25 ± 0.51, at Session 6 (last before childbirth) it was 3.34 ± 0.57, and at Session 7 (after childbirth) it was 3.78 ± 0.45.

took place during the intervention, between sessions 4 and 5 ($df = -0.09$, $p = 0.023$), and between sessions 6 and 7 ($df = -0.16$, $p = 0.026$). The treatment was the most effective regarding the emotions 'scared' ($d = 0.84$), 'nervous' ($d = 0.66$), and 'jittery' ($d = 0.53$; see Table 3). The within-group ES for the change in these emotions from the baseline to the seventh measurement was moderate (Cohen's $d = 0.482$).

Next, we analysed the change in positive emotions (see Figure 2). The Wald test for change in positive emotions was also significant (Wald = 64.41, $df = 6$, $p < 0.001$). The positive emotions started to increase slowly, and the change was statistically significant only after childbirth (session 7). The participants showed more positive emotions after childbirth than during the pregnancy ($df = 0.45$, $p < 0.001$). Emotions such as feeling 'proud' ($d = 1.67$), 'strong' ($d = 0.82$), and 'alert' ($d = 0.76$) increased the most (see Table 4). The within-group ES for change from the baseline to the seventh measurement was large (Cohen's $d = 0.981$).

Table 4. Paired Samples Test of PANAS Emotions.

PANAS Emotions Sessions 1 and 7	Mean	Standard deviation	Standardised error mean	*t*	Sig. (2–tailed)
Interested 1 – Interested 7	–.221	.928	.113	–1.960	.054
Disstressed 1 – Disstessed 7	.176	1.132	.137	1.285	.203
Upset 1 – Upset 7	.206	1.059	.128	1.603	.114
Strong 1 – Strong 7	–.558	.902	.109	–5.380	.000
Guilty 1 – Guilty 7	.000	.773	.094	.000	1.000
Scared 1 – Scared 7	.779	1.104	.134	5.821	.000
Hostile 1 – Hostile 7	.235	.994	.121	1.951	.055
Enthusiastic 1 – Enthusiastic 7	–.412	1.187	.144	–2.660	.006
Proud 1 – Proud 7	–1.397	1.095	.133	.10,52	.000
Irritable 1 – Irritable 7	.088	1.103	.134	.660	.512
Alert 1 – Alert 7	–.544	.871	.106	–5.149	.000
Ashamed 2 – Ashamed 7	.191	.868	.105	1.818	.074
Inspired 1 – Inspired 7	–.522	1.106	.135	–3.867	.000
Nervous 1 – Nervous 7	.574	1.069	.130	4.422	.000
Determined 1 – Determined 7	–206	.890	.108	–1.907	.061
Attentive 1 – Attentive 7	–.221	.808	.098	–2.253	.028
Jittery 1 – Jittery 7	.485	1.086	.132	3.686	.000
Active 1 – Active 7	–.441	1.111	.135	–3.273	.002
Afraid 1 – Afraid 7	.956	3.884	.471	2.029	.046

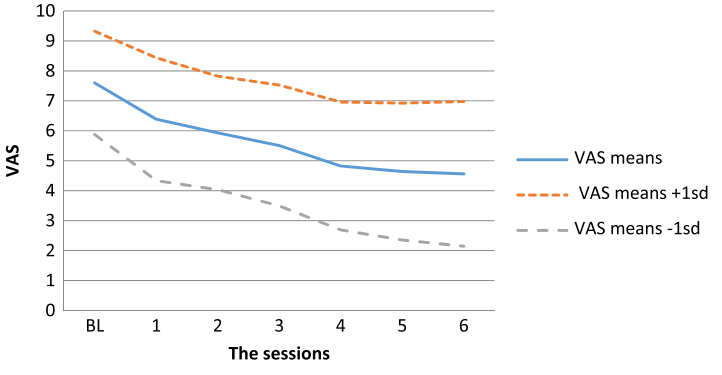

Figure 3. Change in the subjective fear of childbirth (FOC). VAS–measured means at the baseline (BL) before the group intervention and at Sessions 1–6 before childbirth (means from 7.6 to 4.6) (Wald = 230.43, $df = 6$, $p < 0.0001$).

Change in subjective FOC

Then, we conducted an analysis using the VAS, measuring the subjective FOC (see Figure 3). The Wald test for change in the FOC was statistically significant (Wald = 230.43, $df = 6$, $p < 0.001$). The FOC decreased statistically significantly during the intervention from the baseline (mean =7.60, SD =1.72) to the last session before the childbirth (sixth session; mean = 4.56, SD = 2.42, Wald = 230.43, $df = 6$, $p < 0.001$). The change from the baseline was already significant before the intervention, decreasing from the baseline before the intervention to the first session (estimate –1.21, $p < 0.001$), between the first and second session (estimate –0.47, $p = 0.001$), and between the second and third session (–0.44, $p = 0.005$), as well as between the third and fourth session (estimate 0.79, $p < 0.001$). The within-group ES for change from the baseline to the seventh measurement was large (Cohen's d =1.476), representing significant change in the form of decreasing FOC measured with the VAS.

Changes in personal goals

The significance of changes in personal goals was analysed with crosstabs (see Table 5). The personal goals of the participants were analysed using a thematic analysis according to sub-categories. Four thematic sub-categories were identified: self-, childbirth-, infant-, and parenthood-related. These same thematic sub-groups were identified in a previous study (Salmela-Aro et al., 2000). The amounts for each set goal per category were then calculated (see Figure 4). The response rate varied between the sessions, with a maximum $n = 105$. Only $n = 56$ participants answered both at the first and seventh measurement point; these were tested for significance.

In regard to the personal goals of participants in the 'self-related' category, the change was significant: $\chi^2(1) = 11.172, p < 0.001$. At the beginning of the intervention, participants reported a self-related goal significantly more often than after the childbirth. As the intervention proceeded, the personal goals started to shift, first to relating more to the childbirth. The change in the 'childbirth-related' goal category was significant: $\chi^2(1) = 20.045, p < 0.001$, increasing from the beginning of the intervention. Then, the goals shifted to becoming mainly related to parenthood. The change was significant with respect to the

Table 5. Crosstabulation of change in personal goals from session 1 to session 7 ($n = 56$) In this table are included those participants who created a personal goal in both first AND last session).

			Personal goals session 7			
			Self	Infant	Parenthood	Total
Personal goals session 1	Self-related	Count	4	1	24	29
		% within Session 1	13,8%	3,4%	82,8%	100,0%
	Childbirth-related	Count	4	1	17	22
		% within Session 1	18,2%	4,5%	77,3%	100,0%
	Infant-related	Count	1	0	1	2
		% within Session 1	50,0%	0,0%	50,0%	100,0%
	Parenthood-related	Count	0	0	5	5
		% within Session 1	0,0%	0,0%	100,0%	100,0%
Total		Count	9	2	47	58
		% within Session 1	15,5%	3,4%	81,0%	100,0%

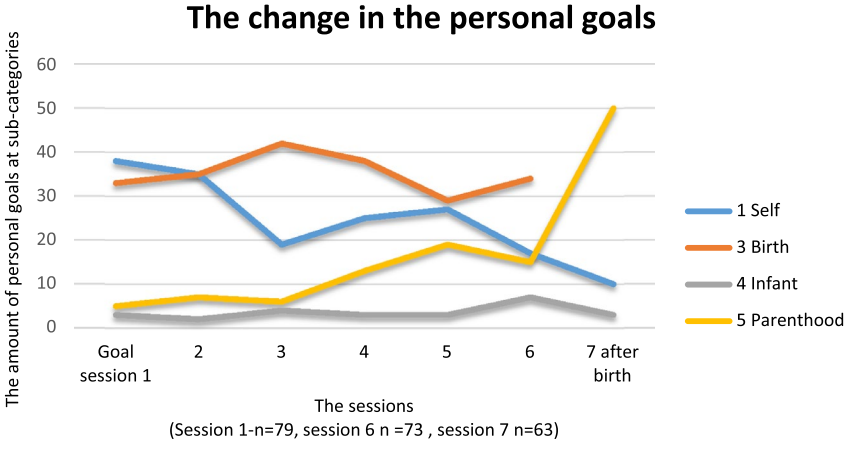

Figure 4. The change with the personal goals. In this figure all those participants are included who created a goal at first session. (Session 1 n =79, Session 6 n = 73, Session 7 after childbirth n = 63).

Table 6. Implications for practice.

Theme	Aim	How to reach
1. Attitude and atmosphere	Increase emotional security and openness Decrease negative emotions: anxiety and fear	Showing acceptance and interest to the experience and emotions of the parturient, also the negative ones
2. Psychoeducation	Increase awareness of stages of labour. Reinforce ways to self –regulate during pain and stress	Sharing information of the pain mechanism in labour and education on relation between emotions and pain
3. Mentalisation-based orientation	Promote towards secure attachment and strengthen bond between parent and child. Promote transition to parenthood-related goals	Promoting mentalisation and supporting the bond with the infant by showing interest and curiosity to the experience of the infant, during pregnancy.
4. Mind-body orientation	Capacity to accept and tolerate fear and difficult emotions Achieve more ways to calm during pain and stress	Teaching body-mind techniques to calm to body and mind

'parenthood-related' goal category: $\chi^2(1) = 39.024$, $p < 0.001$. Accordingly, at the end of the intervention, in the last session before the childbirth and in the session after the childbirth, the participants set goals mostly related to parenthood. The personal goals of the participants changed from being self-related to relating to parenthood issues. In the 'infant-related' category, the change was not significant: $\chi^2(1) < 0.001$, $p > 0.999$; only a few participants mentioned an infant-related goal during the intervention.

As the personal goal shifted from being self-related to themes concerning the childbirth and then concerning parenting, they changed in line with developmental tasks. The following statement is an example of a self-related goal set in Session 1, manifesting insecurity and a mistrust with regard to the hospital staff: 'I want to learn to defend myself in case of mistreatment during the childbirth'. Regarding gaining more security and self-efficacy, typical examples from Session 6 indicating accumulated trust and goals focusing on childbirth are: 'I am ready to meet the challenges of the birth', 'I'm curious to meet my baby', 'I've started looking forward to meeting my baby', or 'The childbirth is something we will go through together'. During the group intervention, the childbirth conceptually began to feel like the starting point of a new era, not an ending point, as FOC patients often describe their childbirth image. The following are examples of personal goals focused on parenthood, expressed in the last session, Session 7, after the childbirth: 'I want to provide a safe and loving childhood for my child', and 'I hope I can succeed as a caring mother'. Examples of the personal goals are provided in Table 6.

Four of the participants set self-related goals throughout the intervention, even after the delivery. These four participants had a very high subjective FOC, measured with the VAS throughout the intervention (at every measurement, VAS > 8).

Discussion

The aim of our study was to examine possible changes in emotions, subjective FOC, and personal goals occurring during a group intervention purposed to treat FOC in the context of the lifespan model of motivation (Salmela-Aro, 2009, 2012). According to our earlier published studies, this group intervention was found to effectively decrease FOC and increase the physical safety of the childbirth (Rouhe et al., 2015). In this current study, we obtained more detailed information about the emotional process and change during this specific

intervention. The information from this study can be used to target the treatment to the essential causes of the fear.

According to this study, the negative emotions shifted from highly negative to less anxious and fearful. The positive emotions increased more slowly, becoming significant only after the childbirth. The personal goals shifted from being mostly self-related to mainly related to parenthood, presumably representing the motivational and emotional shift in preparing to be a parent and strengthening the emotional bond with the infant.

Before participating in the intervention, the women with FOC were preoccupied with anxious and strong negative emotions and thoughts about the impending childbirth. This was seen in the high levels of measured subjective FOC as the intervention began, in the emphasis on negative emotions and narratives in created personal goals, containing expressions of despair and extreme fear. At the beginning of the group intervention, the participants had difficulties handling issues concerning childbirth or parenthood, and they attempted to avoid and control the negative emotions, judged from the discourse of the personal goals. The transcriptions of personal goals consisted of self-related themes, for example, being anxious about one's own survival, while thoughts of the infant and parenthood were hardly mentioned. Without treatment, there was an actual risk of the participants not being able to adjust their personal goals in accordance with the demands of their current life situation as soon-to-be parents. The psychological shift to the phase of parenthood was inhibited with the burden of negative emotions and fear.

According to our results, as participants learned utilitarian methods to regulate their negative emotions and received psycho-educative information regarding childbirth, their FOC decreased, as well as the amount of negative emotions. The decline in the negative emotions of the participants was most evident between the fourth and fifth sessions. By that point of the group intervention, the confidence and safety of the group had already developed, and the group could provide a forum to safely express their fears. The subjective FOC started to decrease already once the participants signed up for the intervention, even before the first session. This can be explained by motivation and hope being created in the anticipation of receiving help and subsequently being able to share one's emotional burden with others in the same situation of being about to give birth. It seems that the decrease of FOC was made possible through gaining a better capacity to regulate emotions, especially negative emotions.

Facilitating emotional security and safety may be pivotal when treating FOC. Learning to tolerate the uncertainty of childbirth also seems to be crucial to be able to prepare for the childbirth and for parenthood (Sheen & Slade, in press). In studies focusing on positive childbirth experiences, women reported feelings of security and emotional empowerment (Nilsson et al., 2013), as well as the feeling of safety essential for gaining control during birth, enabling the women to manage labour positively (Karlström et al., 2015).

The positive emotions increased significantly only after the childbirth. An interesting finding was that acquiring more positive emotions towards childbirth was not obligatory to alleviate the fear. Because the reduction of subjective FOC and shift in the personal goals occurred simultaneously with the decrease in negative emotions, the decrease in negative emotions seemed to be more essential for the change in FOC and personal goals than did the increase in positive emotions.

Through the therapeutic work of the intervention, the representation of childbirth was modified from being mostly negative – brutal, humiliating, and painful for no purpose – to

something more positive: natural, meaningful, and manageable. This was seen in the change of the quality of the narratives in created personal goals. An explanation for the transformed personal goals may be that with a decrease in the negative emotional burden of the impending childbirth, mothers' mental space for personal perspectives may expand and develop. It seems that when the psychological burden and distress were relieved, the natural process of the transition to parenthood started to develop. In this study, the participants' personal goals shifted in a more adaptive direction, and the participants were able to concentrate on a new phase in their life. The shift occurred in line with the normal psychological development and lifespan model of motivation during transition to parenthood. Even the image of the pending childbirth was not altered to one that was more desirable and tempting; rather, it appeared in a more positive manner through the acceptance of it being an inevitable step in the direction towards parenthood.

Because this group intervention protocol consisted of practices to improve mentalisation skills (Allen, Fonagy, & Bateman, 2008) and strengthen the mind–body connection (Davis & Hayes, 2011) of the participants, it may have increased tolerance of the physical and sensory experiences associated with fear and helplessness, as well as increased emotional awareness (Van Der Kolk, 2014). The mindfulness and relaxation exercises can provide an option to uncouple the sensory component from the emotional component, learning to observe the physical sensation of pain and the emotions that arise and then distinguish between the two (Roemer et al., 2009). Mentalising, being able to think about what is happening within one's mind, and high arousal, such as in extreme fear, exist in a reciprocal relationship: Activating either one tends to deactivate the other (Allen, Bleiberg, & Haslam-Hopwood, 2003). Learning to mentalise can broaden the mind, giving more options and therefore enabling a more positive transition to parenthood.

Implications for practise

Women with severe FOC are burdened with shattering negative emotions considering the childbirth and according to studies, this burden hinders the transition to parenthood. According to this study, women with FOC benefit from intervention, where these difficult emotions can be processed with acceptance and effective methods to relieve these emotions can be learned. Psychoeducation containing information about connections between the emotions and pain, purposes and mechanisms of contraction pain, and how to use breathing to calm down during moments of extreme stress in labour can be useful as a means to cope with the negative emotions. As FOC patients attain ways to self-regulate stressful and negative emotions towards childbirth, their natural potential to prepare for childbirth is enabled. In line with the lifespan approach, as the negative emotions and fear ease, the personal goals start to shift from being self-related towards being parenthood-related. This direction of transition is known to be adaptive for positive transition to parenthood (Table 6).

Limitations

As a limitation of this study, we studied the psychological change in the participants during the intervention without any control group. However, earlier longitudinal RCTs published results with this same population (Rouhe et al., 2011, 2013, 2015) have already shown positive effects of the group intervention compared to those in the control group. Another limitation

is the age of the data (2007–2010). The phenomena, however, behind the fear are still not outdated. This encouraged us to focus on gaining a deeper understanding of the emotional and motivational changes that took place within the intervention group. In regard to personal goals, we only focused on self-, birth-, infant-, and parenthood-related personal goals, and we only asked participants to produce one personal goal. There were four participants who reported strong fear throughout the intervention. Their personal goals stayed self-related apart from the intervention, and they did not seem to benefit from the treatment. In the future, it would be important to find out who does not benefit from this kind of treatment and try to help them with other treatment methods.

Conclusions

The results of our study indicated that subjective FOC decreased and personal goals shifted from initially being mostly self-related to becoming more parenthood-related during the group intervention for FOC. The decrease in negative emotions seemed to be more essential for the change than an increase in positive emotions. Various changes occurred simultaneously. The contribution made by our study was gaining more detailed information on how mental changes occur, as well as establishing the benefits of treating FOC using the method of group intervention. Our results support using this kind of treatment for FOC, with an emphasis on supporting women to learn to cope and regulate emotions, especially their negative emotions and fear concerning childbirth. The peer support from group members in the same situation can be a strong corroborative element. With fewer negative emotions towards pending childbirth, the personal goals may shift to more promoted preparedness for childbirth and parenthood. Treating FOC patients with these methods is a promising way to achieve more positive childbirth experiences.

Disclosure statement

No potential conflict of interest was reported by the authors.

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